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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/017,473	12/14/2001	Robert M. Wuertz	3191J-000010	5219

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EXAMINER

ROYAL, PAUL

ART UNIT	PAPER NUMBER
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3611

DATE MAILED: 07/25/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/017,473

Applicant(s)

WUERTZ ET AL.

Examiner

Paul Royal

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 April 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-58 is/are pending in the application.
- 4a) Of the above claim(s) 11-26, 32 and 39-54 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10, 27-31, 33-38, and 55-58 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

1. Claims 11-26, 23 and 39-54 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in Paper No. 7.

Applicant's election with traverse of the restriction of Species I- Figure 2A and Figure 2B understood to be drawn to claims 1-10, 27-31, 33-38 and 55-58 in Paper No. 7 is acknowledged.

The traversal is on the ground(s) that Figures 6-7 are closely related to Figure 5 is persuasive, however the traversal on the ground(s) that the field of search for each disclosed invention will substantially overlap and a separate field of search is shown to exist only when of the distinct subjects can be searched in places where no pertinent art of the other subject exists and in the instant cast there will not be a serious burden on the Examiner if the restriction is not required.

Note applicant has not provided any reasoning that the embodiments identified by the Examiner should not be considered distinct species.

Applicant's arguments are not persuasive because the claims are drawn to a wide variety of configurations (species) for controlling the direction and rotation of the wheels and searching the variety of species would be a serious burden on the Examiner if the restriction is not required.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-10, 27-31, 33-38 and 55-58 are rejected under 35 U.S.C. 102(b) as being anticipated by Smith et al. (US 5,249,422).

Smith et al. teaches a drive-by-wire vehicle, the vehicle comprising: at least two independently driven wheels capable of bi-directional rotation the at least two wheels being independently driven so that operation of the at least two wheels causes the at least two wheels to independently rotate which propels and steers the vehicle (see column 3, lines 40-54);

a microprocessor (20), the microprocessor controlling the operation of the at least two wheels in accordance with signals received by the microprocessor;

and at least one controller (28a, 28b), the at least one controller sending signals to the microprocessor (20) that the microprocessor uses to control the operation of the at least two wheels so that operation of the at least one controller causes the at least two wheels to propel and steer the vehicle;

wherein the at least two wheels are hydraulically driven and further comprising: at least one hydraulic pump (205) that provides a flow of hydraulic fluid to drive the at least two wheels;

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at least one proportional servo valve (80a, 80b) that controls a direction and speed of the flow of hydraulic fluid to the at least two wheels, the at least one valve being controlled by the microprocessor and adjusting the flow of hydraulic fluid to the at least two wheels in response to signals received from the microprocessor, the adjusting of the flow of hydraulic fluid by the at least one valve controlling the direction and speed of rotation of the at least two wheels so that the vehicle can be propelled and steered;

the at least one hydraulic pump (205) is one of a plurality of hydraulic pumps (225a, 225b);

a first hydraulic pump of the plurality of hydraulic pumps provides a flow of hydraulic fluid to a first wheel of the at least two wheels; a second hydraulic pump of the plurality of hydraulic pumps provides a flow of hydraulic fluid to a second wheel of the at least two wheels; the at least one proportional servo valve (80a, 80b) is one of a plurality of proportional servo valves; a first valve (80a) of the plurality of valves adjusting the flow of hydraulic fluid from the first hydraulic pump of the plurality of hydraulic pumps to the first wheel of the at least two wheels in response to signals received from the microprocessor (20); and a second valve (80b) of the plurality of valves adjusting the flow of hydraulic fluid from the second hydraulic pump of the plurality of hydraulic pumps to the second wheel of the at least two wheels in response to signals received from the microprocessor (20), see column 7, lines 17-49.

wherein the at least one controller further comprises: a first controller (28a) that sends signals to the microprocessor that the microprocessor uses to control the operation of a first wheel of the at least two wheels so that operation of the first

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controller causes the first wheel of the at least two wheels to rotate; and a second controller (28b) that sends signals to the microprocessor that the microprocessor uses to control the operation of a second wheel of the at least two wheels so that operation of the second controller causes the second wheel of the at least two wheels to rotate;

wherein the first and second controllers (28a, 28b) are each selectively moveable between forward and reverse positions; movement of the first controller toward the forward position causing the first wheel of the at least two wheels to rotate in a direction that corresponds to propelling the vehicle in a forward direction and movement of the first controller toward the reverse position causing the first wheel of the at least two wheels to rotate in a direction that corresponds to propelling the vehicle in a backward direction; and movement of the second controller toward the forward position causing the second wheel of the at least two wheels to rotate in a direction that corresponds to propelling the vehicle in a forward direction and movement of the second controller toward the reverse position causing the second wheel of the at least two wheels to rotate in a direction that corresponds to propelling the vehicle in a backward direction, see column 10, lines 50-59;

each controller (28a, 28b) has a neutral position disposed between the forward and reverse positions; positioning of the first controller in the neutral position causing the first wheel of the at least two wheels to not be driven; and positioning of the second controller in the neutral position causing the second wheel of the at least two wheels to not be driven, see column 5, line 67- column 6, line 8);

wherein movement of the first and second controllers (28a, 28b) from the neutral position toward the forward and reverse positions causes a speed of rotation of the respective first and second wheels of the at least two wheels to increase in proportion to the movement of the first and second controllers from the neutral position, see column 6, lines 9-49;

a biasing switch/mode switch/gain controller (62), the biasing switch/mode switch/gain controller (62), being selectively operable to adjust the operation of the at least two wheels so that the vehicle can track a desired path, the biasing switch sending signals to the microprocessor in response to operation of the biasing switch/gain controller that the microprocessor uses to control the operation of the at least two wheels;

the biasing switch/mode switch/gain controller (62), being selectively operable between a work position and a transport position to adjust the operation of the at least two wheels, the work position corresponding to normal operation of the vehicle and the transport position corresponding to high speed operation of the vehicle, and the mode switch sending a signal to the microprocessor that the microprocessor uses to control the operation of the at least two wheels; and the microprocessor operating the vehicle in a normal mode when the biasing switch/mode switch/gain controller is in a work position and reducing a rate at which the at least two wheels steer the vehicle when the mode switch is in a transport mode so that the vehicle can safely turn during high speed operation.

biasing switch/mode switch/gain controller (62), allowing a user of the vehicle to adjust the response of the vehicle caused by operation of the at least one controller, and operation of the gain controller causing the gain controller to send signals to the microprocessor that inform the microprocessor on how to interpret signals from the at least one controller; and the microprocessor adjusts the operation of the at least two wheels in response to signals received by the microprocessor from the at least one controller based upon signals received from the biasing switch/mode switch/gain controller.

For claim 8, note the pedal details incorporated by reference to Patent No. 4,925,075 include, at column 3, lines 26-30, wherein the pedal is biased to the neutral (idle position) when no force is applied.

Note the ground engaging drive means are understood to be the same as the wheels of the instant invention.

For claims 27-29, and 55-57 note, the biasing switch/mode switch/gain controller are understood to be the same where they operate to adjustably determine how much of a speed command will be imparted to each wheel. Also, applicant has not presented any specific information such as how the "mode switch" distinguishes between an input indicating a request to increase/decrease speed and an input indicating a turn where the "mode switch" is supposed to allow the speed increase but at least partially inhibit the turning. For example, applicant should indicate where the "mode switch" appropriately adjusts specific valves or flow rates that distinguish between an input indicating a request to increase/decrease speed and an input indicating a turn. This

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information should also clearly distinguish the "mode switch" from the biasing switch and the "gain controller".

For claims 10 and 38 where Smith et al. teaches use of data tables containing specific minimum and maximum applicable speeds separately in the forward and reverse directions, Smith et al. is inherently understood to teach that the mower is capable of being propelled faster in the forward direction than in the backward direction because a set of data points indicating a slower reverse speed than the data points for the forward speed can be input into the EEPROM which contains the data tables.

Conclusion


3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Colten teaches a hydrostatic transmission. Schaefer teaches a power train control system. Cryder et al. teaches a hydrostatic drive control system. Erickson et al. teaches a steering actuated motor displacement control valve. Hawkins teaches a vehicle steering control system. Holtkamp teaches a hydrostatic propulsion system. Holtkamp et al. teaches a hydrostatic propulsion system. Bianchetta teaches controls for multiple variable displacement pumps. Eckhardt et al. teaches vehicles with differential speed steering.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul Royal whose telephone number is 703-308-8570. The examiner can normally be reached on 8:30-4:30.


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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lesley Morris can be reached on 703-308-0629. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9326 for regular communications and 703-872-9327 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1113.


P. Royal
July 14, 2003

Paul Royal
Examiner
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ADVISORY PATENT EXAMINER
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